PLATONOV, Pavel Ivanovich; SHCHERBINSKIY, Ya.N., red.; GOSPODARSKAYA, T.N., red. izd-va; SHIBKOVA, R.Ye., tekhn. red.

[Organizing and planning the production of lumber floating enterprises] Organizatsiia i planirovanie proizvodstva lesosplavnykh predpriiatii. Moskva, Goslesbumizdat, 1962. 258 p. (MIRA 16:5)

(Lumber--Transportation)

USSR/General Problems of Pathology - Tumors. T-5

Abs Jour : Ref Zhur - Biol., No 4, 1958, 17469

Author : Abdulayev, D.M., Akhundova, A.M., Ter-Mkrtycheva, O.Kh., Shcherbits-kaya, L.A.

Inst : -

Title : The Treatment of Leukemias According to the Data of the Clinico-Hematologic Department of AzIFK.

Orig Pub : Sb. nauchn. tr. Azerb. n.-i. in-ta perelivaniya krovi, 1957, vyp. 3, 18-37.

Abstract : No abstract.

Card 1/1

USSR/General Problems of Pathology. Comparative Oncology. U
Human Neoplasms.

Abs Jour : Ref Zhur Biol., No 1, 1959, 4233

Author : Abdulayev, D.M., Shcherbitskaya, L.A.

Inst : Azerbaydzhan Scientific Research Institute of Blood Transfusion.

Title : The State of Hemodynamics in Leukoses

Orig Pub : Sb. nauchn. tr. Azerb. n.-i. in-ta perelivaniya krovi, 1957, vyp. 3, 38-44

Abstract : A dynamic study of the condition of the cardiovascular system in 17 patients with acute leukosis (AL) and in 43 patients with chronic leukosis (CL) demonstrated that extrasystolic arrhythmia was noted only in isolated cases. The maximal and minimal arterial pressure was lowered, particularly in patients with AL. A decrease of

Card 1/2

Problems of Pathology
Oncology
Abs Jour

SHCHERBO, G. M.

SHCHERBO, G. M. --"Investigation of the Basic Problems Connected with the Use of Silicate Manufactures in the Outer Walls of Massproducted Residential Buildings." Min Higher Education USSR, Moscow Order of Labor Red Banner Construction Engineering Inst imeni V. V. Kuybyshev, Moscow, 1956 (Dissertation for the degree of Candidate in Chemical Science.)

KNIZHNAYA LETOPIS
No 41, October 1956

SHCHERBO, G.M., inzhener (g. Moskva)

Studying certain characteristics of walls of large silicate block. Stroi.pred.neft.prom. 2 no.5:12-15 My '57. (MIRA 10:7)
(Walls) (Silicates) (Hollow tiles)

SHCHERBO, G.M., inzh.

Using plain and foamed silicate products in building exterior apartment house walls. Transp. stroi. 7 no.11:15-18 N '57.
(Walls) (Silicates) (MIRA 11:2)

SHCHERBO, G., kand.tekhn.nauk

From the history of silica brick. Stroitel' no.5:31 My '58.
(MIRA 11:6)

(Silicates) (Bricks)

SHCHERBO, G.M., kand.tekhn.nauk

Mesh-reinforced concrete and its use. Transp.stroi. 10 no.2: 52-54 F '60. (MIRA 13:5)
(Reinforced concrete)

SHCHERBO, G.M., kand.tekhn.nauk

History of the construction of city road pavements in Moscow (prerevolutionary period). Mat. po ist. stroi. tekh. no.2: 214-260 '62. (MIRA 16:5)

(Moscow--Pavements)

SHCHERBO, Georgiy Mikhaylovich, kand. tekhn. nauk; IVANOV, S.M., red.

[Apartment houses from prefabricated parts] Doma iz gotovykh detalei. Moskva, Izd-vo "Znanie," 1965. 32 p. (Novoe v zhizni, nauke, tekhnike. IV Seriia: Tekhnika, no.18) (MIRA 18:8)

SHNEYDER, R.G.; SHCHERBO, I.A.

Jupiter in 1948. BiulVAGO no.11:26-30 '52. (MLRA 6:6)

1. Moskovskoye otdeleniye Vsesoyuznogo astronomo-geodezicheskogo obshche-stva, otdel planet i Luny. (Jupiter (Planet))

SHCHERBO, L. I.

79-11-26/56

AUTHORS: Kolesnikov, G. S., Smirnova, T. V., [illegible], L. I., Mikhaylovskaya, [illegible], Shcherbo, L. I.

TITLE: Derivatives of Hexamethyleneimine. II. Synthesis of the Hexamethyleneamides of Organic Acids (Proizvodnyye [illegible] II. Sintez [illegible]metilenamidov organicheskikh kislot)

PERIODICAL: Zhurnal Obshchey Khimii, 1957, Vol. 27, Nr 11, pp. 3005 - 3009 (USSR)

ABSTRACT: Continuing the investigation in the field of the synthesis of hexamethyleneimine-derivatives the authors attempted to obtain and characterize the hexamethyleneamides of [illegible]. In patent publications only [illegible] the hexamethyleneamide of formic acid [illegible], nothing else. The [illegible] solvent of [illegible] is [illegible], after hydration [illegible] between hexamethyleneimine and formic acid, [illegible] the following [illegible] of the primary salt of the two compounds, [illegible] course:

$$(CH_2)_6NH + HCOOH \longrightarrow (CH_2)_6NH.HCOOH \longrightarrow (CH_2)_6NCOH + H_2O$$

The hexamethyleneamide of acetic acid is obtained by action of an excess of hexamethyleneimine upon acetylchloride:

$$2(CH_2)_6NH + CH_3COCl \longrightarrow (CH_2)_6NCOCH_3 + (CH_2)_6NH.HCl$$

Card 1/2

T-11-2/56

Derivatives of Hexamethylenimine. II. Synthesis of the Hexamethylenamides of Organic Acids

In this manner the hexamethylenamides of benzoic acid, carbonic acid, fluoracetic acid, chloracetic acid, bromacetic acid, iodoacetic acid, and p-bromobenzoic acid (?) are prepared, those of metacrylic acid and benzene sulfonic acid from their chlorohydrides with hexamethylenimine in the presence of pyridine. Only one of the 12 synthesized hexamethylenamides had been described earlier. There are 1 table, and 4 references, 1 of which is Slavic.

ASSOCIATION: Moscow Chemico-Technological Institute
(Moskovskiy khimiko-tekhnologicheskiy institut)

SUBMITTED: December 3, 1955

AVAILABLE: Library of Congress

1. Hexamethylenimine-Derivatives 2. Hexamethylenamides-Synthesis

Card 2/2

79-2-52/64

AUTHORS: Kolesnikov, G. S., Shcherbo, L. I.

TITLE: Hexamethylene Imine - Derivatives (Proizvodnyye geksametilenimina).
III. Substituted N-Benzyl-Hexamethylene-Imines
(III. Zameshchennyye N-benzilgeksametileniminy).

PERIODICAL: Zhurnal Obshchey Khimii, 1958, Vol. 28, Nr 2, pp. 519-520 (USSR)

ABSTRACT: Continuing the hitherto carried out investigations the compounds quoted in the title were obtained from the reaction between hexamethylene imine and benzyl halides (containing a substituent in the nucleus) according to the scheme:

$$(CH_2)_6NH + ArCH_2X \longrightarrow (CH_2)_6NCH_2Ar + HX$$

Fluorine, chlorine, and bromine were used. The methods of syntheses were the same as in the preceding works. The derivatives obtained were characterized by their picrates and are given on a table. N-o- and p-fluoro benzyhexamethylene imine, N-benzylhexamethylene imine, N-o-, -m-, and -p- chloro benzyl hexamethylene imine as well as N-p-bromo benzyl hexamethylene imine were obtained. Six of the mentioned

Card 1/2

Hexamethylene Imine - Derivatives. 79-2-52/64
III. Substituted N-Benzyl-Hexamethylene-Imines

compounds are described for the first time. The method of preparation and specific data are given.
There are 1 table, and 2 references, 2 of which are Slavic.

ASSOCIATION: Moscow Chemical and Technological Institute
(Moskovskiy khimiko-tekhnologicheskiy institut).

SUBMITTED: February 13, 1957

AVAILABLE: Library of Congress

Card 2/2

L 25545-66 EWT(1)/EWA(h) GW

ACC NR: AP6005837 SOURCE CODE: UR/0387/65/000/010/0063/0071

AUTHOR: Vasil'yev, Yu. I.; Shcherbo, M. N.

ORG: Institute of Physics of the Earth, Academy of Sciences, SSSR (Institut fiziki Zemli Akademii nauk SSSR)

TITLE: Plastic shear waves in the soil

SOURCE: AN SSSR. Izvestiya. Fizika Zemli, no. 10, 1965, 63-71

TOPIC TAGS: seismic wave, [redacted], [redacted] seismology, wave mechanics, seismography, seismologic instrument

ABSTRACT: The authors describe experiments conducted in the summer of 1963 in the Rostovskaya oblast for generating plastic shear waves in the soil. Dynamic loading was accomplished by the blows of a cylindrical weight against the surface of the earth. A cylinder 30 cm in diameter and weighing 150 kg was used. This load was dropped from a height ranging from a few centimeters to 7.5 meters. The maximum velocity preceding impact was 0.5-12 m/sec. The equipment used for recording the plastic waves consisted of ASED and NS-4 low-frequency seismic detectors in combination with low-frequency amplifiers and a standard seismic prospecting oscillograph. The observations were taken in direct proximity to the point of application of the force. Plastic shear waves propagating in the soil are similar to elastic transverse waves in a region which shows a nonlinear stress-deformation relationship and predominantly

UDC: 534.2:550.834

Card 1/2

L 25545-66
ACC NR: AP6005837

inelastic plastic deformations of the medium (close to the source). Seismograms are given for various systems of instrument location in the soil. These seismograms are analyzed to determine some of the kinematic parameters of the waves close to the source and the nature of wave polarization. The authors are sincerely grateful to N. V. Zvolinskiy for discussing various procedural problems. Orig. art. has: 8 figures.

SUB CODE: 08/ SUBM DATE: 09Feb65/ ORIG REF: 011/ OTH REF: 001

Card 2/2 ULR

S/049/61/000/011/002/005
D239/D303

AUTHORS: Vasil'yev, Yu. I., and Shcherbo, M.N.

TITLE: On characteristic oscillations in the system horizontal seismograph - ground

PERIODICAL: Akademiya nauk. Izvestiya. Seriya geofizicheskaya; no. 11, 1961, 1614-1623

TEXT: The study was carried out in 1958-59 in view of the paucity of such observations compared with those on a system vertical seismograph - ground. It was made by the impulse method according to I. P. Pasechink (Ref. 6: Izv. AN SSSR ser. geofiz. no. 1, 1952) using four types of seismograph, but mainly the СЭДС-52 (SEDS-52). All the seismographs were well-damped and used in conjunction with an amplifier flat from 4 - 200 c/s, with which various filters were used, whose characteristics are graphed. The authors are certain that the records are of oscillations characteristic of the whole system and not just stray resonances e.g. in the beams. Experiments were made in shallow pits up to 55 cm deep in the overburden, at

Card 1/3

On characteristic oscillations ...

which depth there was a limestone basement. In some experiments the baseplate was covered with earth or sand. The most striking result was that the characteristic frequency of oscillations was always higher than that of the horizontal, the former lying in the range 75-125 c/s and the latter in the range 35-60 c/s. the ratio of the two for any given set-up occasionally reaching a value of 2.5 : 1. The decrement of the vertical was also 2 - 2.5 times that of the horizontal. The best conditions are clearly to bury the instrument in a shallow pit and cover the base with sand or earth. A theory is derived for the case of an elliptical baseplate resting on a semi-infinite elastic medium which can account for the results and shows how the ratio of vertical to horizontal characteristic frequencies depends on Poisson's ratio. Ya. Kh. Shaykhyanov took part in the experiments and L. I. Bokanyenko suggested one of them. L. M. Flitman is acknowledged as a colleague. There are 7 figures and 13 references: 11 Soviet-bloc and 2 non-Soviet-bloc. The references to the English-language publications read as follows: A. Wolf, The equation of motion of a geophone on the surface of an elastic earth. Geophys., 9, no. 1, 1944; F. Gossmann. Elastic waves through a

Card 2/3

On characteristic oscillations ... S/049/61/000/011/002/005
D239/D303

packing of spheres. Geophys., 16, no. 4, 1951.

ASSOCIATION: Akademiya nauk SSSR, Institut fiziki zemli (Academy of Sciences of the USSR, Institute of Physics of the Earth)

SUBMITTED: April 28, 1961

Card 3/3

AID P - 4724

Subject : USSR/Aeronautics - education

Card 1/1 Pub. 135 - 5/23

Author : Shcherbo, P. M., Guards Maj., Pilot class I

Title : From the experience in educational work of squadron commanders.

Periodical : Vest. vozd. flota, 7, 23-25, Jl 1956

Abstract : The author emphasizes the importance of periodic conferences to be organized by the squadron commander for the purpose of discussing various educational and training methods with his flight commanders. One photo. The article is of informative value.

Institution : None

Submitted : No date

SHCHERBO, V. I.

USSR/ Miscellaneous - Mail processing

Card 1/1 Pub. 133 - 13/19

Authors : Shcherbo, V. I., Acting Chief of the Main Post-Office in Moscow

Title : Greater attention should be paid to "indexing" of correspondence (marking the Moscow post-office district zones by an appropriate letter)

Periodical : Vest. svyazi 1, 23 - 24, Jan 1955

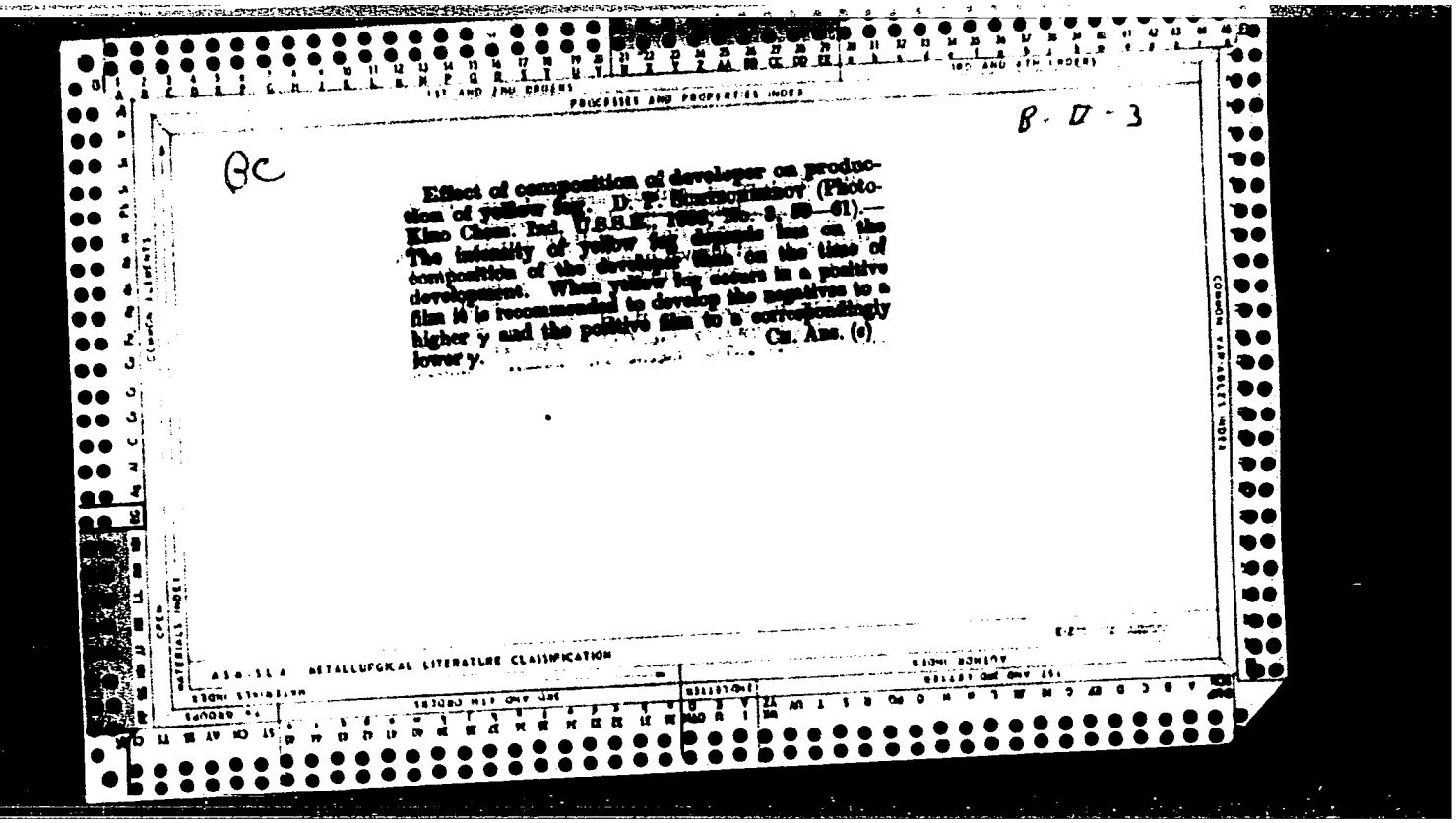
Abstract : Information is given on the district zoning of mail, introduced in Moscow since 1954, according to which the city was divided into 10 districts. The districts and the letter appropriated for each district are listed.

Institution: .....

Submitted: .....

RUDAK , V.I., inzh.; SHCH OV, A.I., inzh.

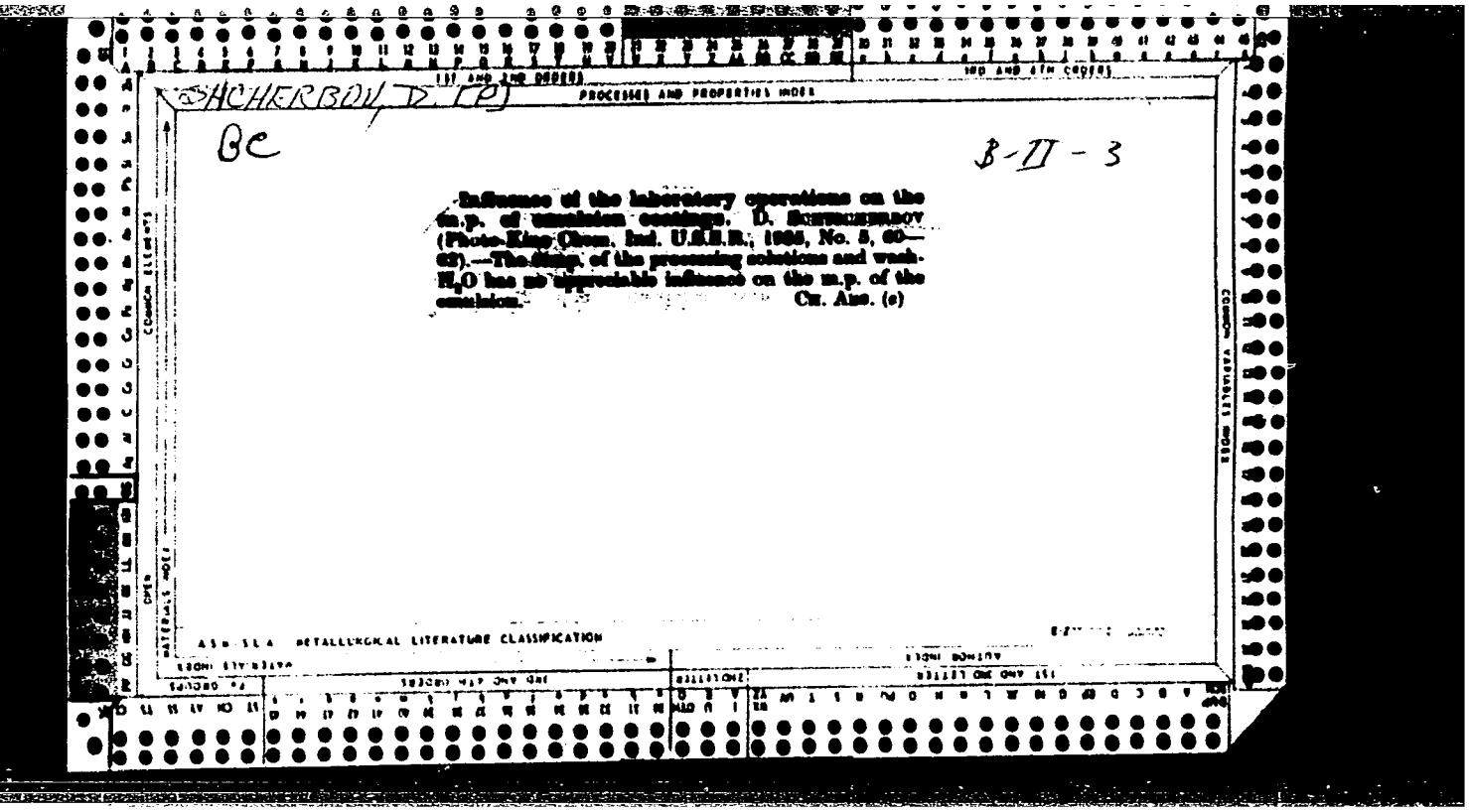
Mechanization of the working of frozen ground in the State Union Trust for the Design and Construction of Hydraulic Structures. Stroi. i dor. mash. 6 no.10:16-18 O '61. (MIRA 14:10)
(Earthmoving machinery)
(Frozen ground)



B. D - 3

BC

Effect of composition of developer on production of yellow fog. D. P. Shuteporinov (Photo-Kino Chem. Ind. U.S.S.R., 1939, No. 3, 59—61).—The intensity of yellow fog depends less on the composition of the developer than on the time of development. When yellow fog occurs in a positive film it is recommended to develop the negatives to a higher γ and the positive film to a correspondingly lower γ. Cu. Abs. (e)

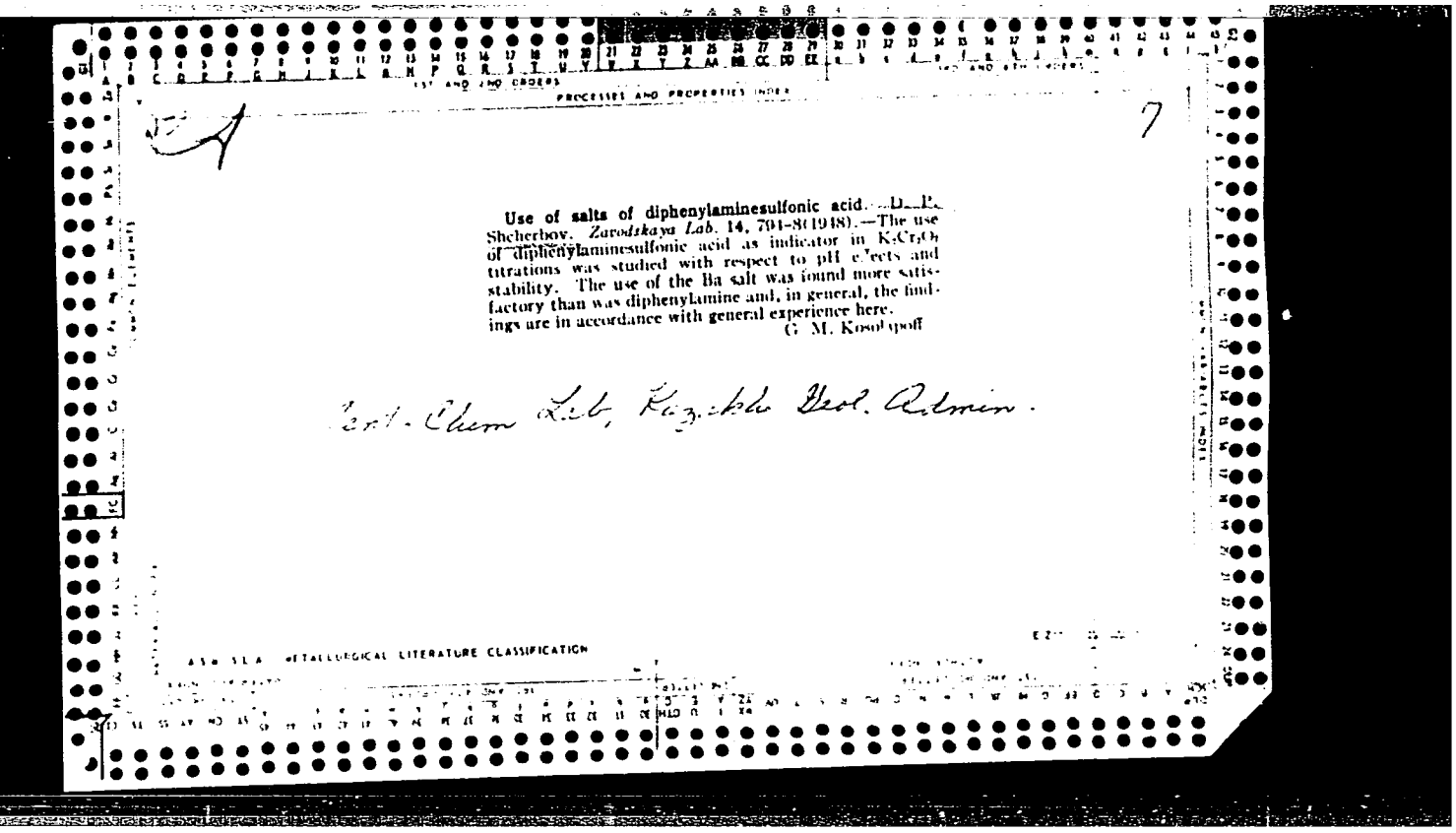


SHCHERBOV, D. [P]

Bc

B-II - 3

Influence of the laboratory operations on the m.p. of uranium coatings. D. Shcherbov (Photo-Kinop Chem. Ind. U.S.S.R., 1956, No. 5, 60—62).—The filing of the processing solutions and wash-H_2O has no appreciable influence on the m.p. of the coatings. Cr. Abs. (e)



PROCESSES AND PROPERTIES INDEX

7

Use of salts of diphenylaminesulfonic acid. D. P. Shcherbov. *Zavodskaya Lab.* 14, 701–8(1948).—The use of diphenylaminesulfonic acid as indicator in $K_2Cr_2O_7$ titrations was studied with respect to pH effects and stability. The use of the Ba salt was found more satisfactory than was diphenylamine and, in general, the findings are in accordance with general experience here.
G. M. Kosolapoff

Ext. Chem Lab, Kazakh Geol. Admin.

A.S.T.M. METALLURGICAL LITERATURE CLASSIFICATION

(A

A stable scale in the colorimetric determination of phosphorus. D. P. Shcherbov (Kazakh Geol. Admin., Alma-Ata, U.S.S.R.). *Zhur. Anal. Khim.* 4, 152-7 (1949).—Instead of the unstable phosphovanadomolybdate solns., better standards were obtained with acidified $K_2Cr_2O_7$ solns. to which $CuSO_4$ was added to eliminate the red tint. M. Hoeh

CA

Photometric determination of cobalt in iron-nickel ores with nitroso-R-salt. D. P. Shcherbov. *Zavodskaya Lab.* 15, 1399-1406(1949).—The results of a detailed investigation of the applicability of nitroso-R-salt for detg. Co are described. The color is best examd. in 520-50 mμ region or by using a green filter with blue threshold at 500 mμ. Detns. of 10^{-3} to 0.5% are readily made with deviations within 5% by using small samples and larger amts. of the reagent. Fe^{++} lessens the color intensity but excess of reagent (3-4 fold) compensates for this effect readily. G. M. Kosolapoff
30 references.

SHCHUKIN, I. P.

B.P. Shchukin. Manufacture of instruments and apparatus for chemical analysis. Construction of the Soviet photocolorimeter. P. 1256 (Criticism & Exchange of Opinion)

Central Lab. of
Kazakh Geological Admin.

SO: Factory Laboratory, No. 10, 1950

CA

1

Color saturation of solutions in colorimetry. D. P. Shcherbov (Kazakh Geol. Admin., U.S.S.R.). *Zavodskaya Lab.* 16, 1030–40(1950).—Solns. often used for colorimetry (Ni dimethylglyoxime, Co nitroso-R-acid complex) display an apparent deviation from linearity caused by so-called "color satn." which depends on conditions of the actual measurement: large cell thickness, spectral compn. of light, etc. The effect appears usually on approach to $E = 1.0$. Alteration of the wave-length range used and use of thinner cell weaken the effect. G. M. Kosolapoff

SHCHERBOV, D.P.; PASHEVKINA, I.N.; BAKARASOVA, V.P.

Use of polarimetric determinations in bulk analysis of ores. Trudy lab.geol.upr. no.1:31-50 '51. (MLRA 7:11)

1. TSentral'naya laboratoriya Kazakhskogo geologicheskogo upravleniya.
(Polariscope)
(Ores--Sampling and estimation)

SHCHERBOV, D.P.

Photocolorimetry as a method of accelerated analysis. Trudy lab. geol. upr. no.1:51-62 '51. (MLRA 7:11)

1. TSentral'naya laboratoriya Kazakhskogo geologicheskogo upravleniya.
(Colorimetry)
(Mineralogy, Determinative)

ASTAF'YEV, K.V.; KAZANTSEV, G.V.; TSIBUL'SKIY, K.I.; SHCHERBOV, D.P.; SHMANENKOV, I.V., redaktor; SERGEYEVA, N.A.; BORISOV, A.S., tekhnicheskiy redaktor

[Team and continuous work methods in chemical laboratories] Brigadno-potochnyi metod raboty v khimicheskikh laboratoriiakh. Trudy lab.geol.upr. no.2:3-47 '52. (MLRA 7:11)
(Chemical laboratories)

SHCHERBOV, D.P.

Chromatic selectivity and choice of a light filter for colorimetry.
Izv.AN Kazakh.SSR.Ser.khim.no.8:84-93 '55. (MLRA 9:4)
(Colorimetry)

Shcherbov, D.P.

Expression of practical quantitative characteristics of colorimetric reactions. D. P. Shcherbov. *Invest. Akad. Nauk. Kazakh. S.S.R., Ser. Khim.* No. 8, 94–103(1955)(in Russian).—A calibrated curve, obtained on photo-colorimetry under standard conditions, is the basis for a quant. characteristic of colorimetric reactions. Sensitivity, differentiation of color of products, and effective limits of application of a colorimetric reaction can be detd. from the curve.

V. N. Bednarski

Cit

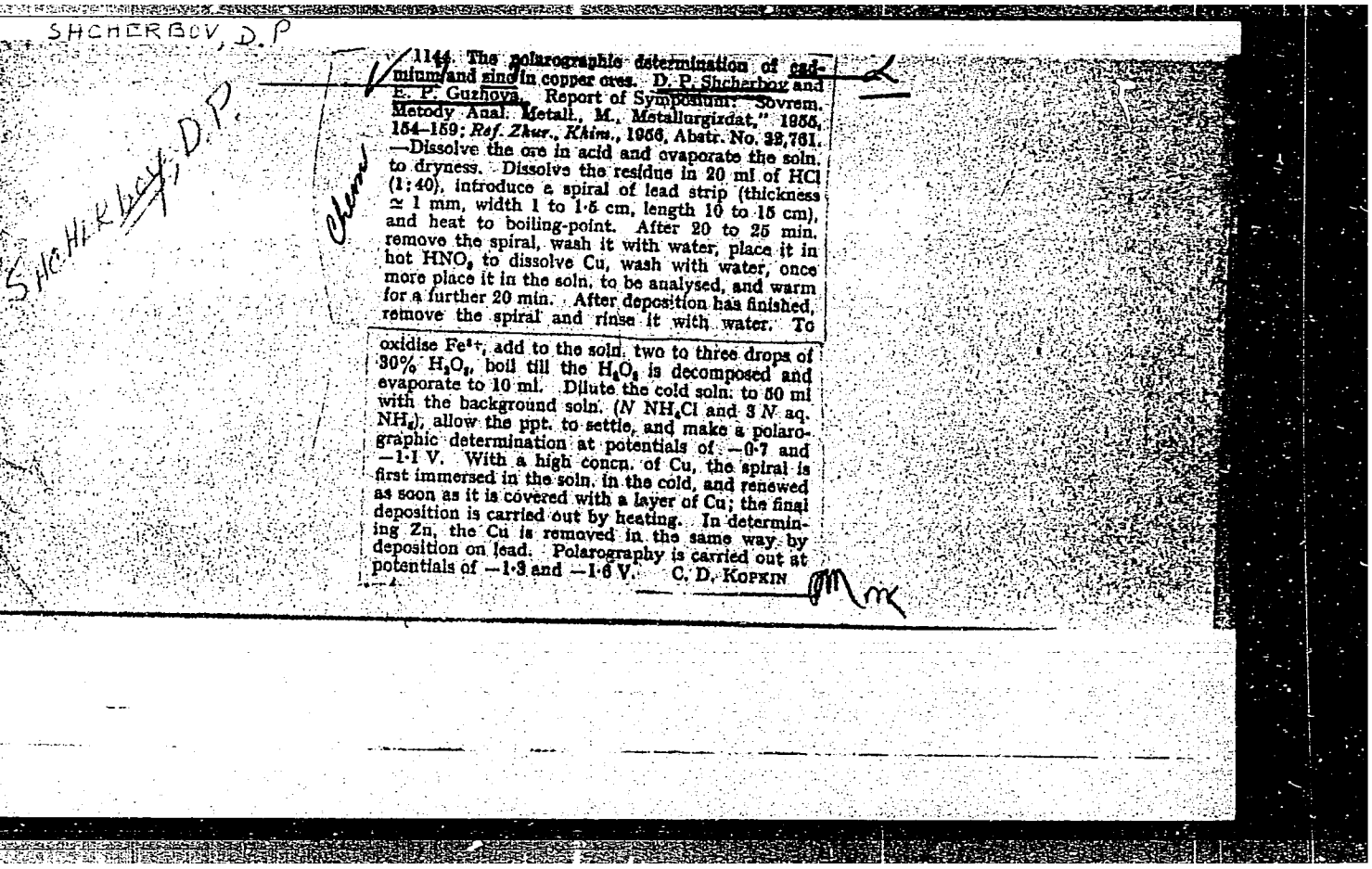
SCHERBOV, D. P.

2662. The photocolorimetric determination of cadmium in polymetallic ores by means of dithizone. D. P. Shcherbov and N. K. Sheytsova. *Izvest. Akad. Nauk Kazakh. SSR, Ser. Khim.*, 1955, (8), 105–113; *Ref. Zhur., Khim.*, 1955, (17), Abstr. No. 37,507.—The determination of Cd is based on measurement of the intensity of the red colour of a soln. of the Cd - dithizone compound, separated from Bi, Fe, Mn, Pb and Zn by extraction with CCl_4 in alkaline medium in the presence of tartrate; Cu is removed by a preliminary extraction from acid soln. Decompose 0·1 g of the polymetallic ore (0·01 to 0·75 per cent. of Cd, $\geq$ .5 per cent. of Cu) with 10 ml of aqua regia and evaporate to dryness; add 5 ml of HCl (1:1) and evaporate once more. Moisten the dry residue with HCl (1:1), dissolve it by warming with 10 ml of water and make the vol. up to 50 ml. Acidify an aliquot with HCl, add 5 ml of 0·05 per cent. dithizone in CCl_4 and shake for 1 to 2 min. Separate the violet organic layer (dithizone - Cu compound). Extract the aq. soln. repeatedly until the violet colour changes to green. To the aq. layer add 2 ml of 20 per cent. K Na tartrate soln., a crystal of hydrazine sulphate, 15 ml of 10 per cent. NaOH and 10 ml of 0·01 per cent. dithizone in CCl_4. To the lower layer (containing the Cd - dithizone and some Zn - dithizone) add 5 ml of 5 per cent. NaOH soln. Wash the orange - red layer repeatedly with NaOH soln. until colourless. Wash the dithizone - Cd soln. with water and measure the extinction, with a green filter, at 500 to 520 mμ. The colour of the soln. is stable for 6 hr. A blank determination is made with the reagents. Results are satisfactorily reproducible for $\leq$ 15 μg of Cd in 10 ml of soln.

C. D. KOPKIN

SHCHERBOV, D.P.; SAGALOVICH, I.I.

Coprecipitation of certain ions with iron hydroxide in a chloride--ammoniacal solution. Izv.AN Kazakh.SSR.Ser.khim.no.8:114-117 '55. (Iron hydroxides) (Precipitation (Chemistry)) (MLRA 9:4)



SHCHERBOV, D.P

SHCHERBOV, D.P.

Chem

1144. The polarographic determination of cadmium and zinc in copper ores. D. P. Shcherbov and E. P. Guzhova. Report of Symposium: "Sovrem. Metody Anal. Metall., M., Metallurgizdat," 1955, 154–159; *Ref. Zhur., Khim.*, 1956, Abstr. No. 32,761. —Dissolve the ore in acid and evaporate the soln. to dryness. Dissolve the residue in 20 ml of HCl (1:40), introduce a spiral of lead strip (thickness ≃ 1 mm, width 1 to 1·5 cm, length 10 to 15 cm), and heat to boiling-point. After 20 to 25 min. remove the spiral, wash it with water, place it in hot HNO_3 to dissolve Cu, wash with water, once more place it in the soln. to be analysed, and warm for a further 20 min. After deposition has finished, remove the spiral and rinse it with water. To oxidise Fe^{2+}, add to the soln. two to three drops of 30% H_2O_2, boil till the H_2O_2 is decomposed and evaporate to 10 ml. Dilute the cold soln. to 50 ml with the background soln. (*N* NH_4Cl and 3 *N* aq. NH_3), allow the ppt. to settle, and make a polarographic determination at potentials of −0·7 and −1·1 V. With a high concn. of Cu, the spiral is first immersed in the soln. in the cold, and renewed as soon as it is covered with a layer of Cu; the final deposition is carried out by heating. In determining Zn, the Cu is removed in the same way by deposition on lead. Polarography is carried out at potentials of −1·3 and −1·6 V. C. D. KOPKIN

SHCHERBOV, D.P.

1178. Absorptiometric determination of arsenic in minerals by hypophosphite. D. P. Shcherbov and K. I. Dou. Report on Symposium: "Sovrem. Metody Anal. Metall., M., Metallurgizdat," 1955, 160–160: *Ref. Zhur. Khim.*, 1956, Abstr. No. 39,838.—The sample of ore with 1 ml of a mixture of HNO_3 and HCl (1:1) is heated to disintegration and evaporated to dryness. The residue is moistened with HCl, 10 ml of H_2SO_4 is added and evaporated until SO_3 vapours are evolved; after cooling, water is added and the evaporation is repeated. The residue is cooled, dissolved in 40 to 50 ml of water and aq. NH_3 is added until a slight odour of NH_3 is observed. The ppt. of Al_2O_3 is filtered off and washed with hot water containing aq. NH_3, then dissolved in 1 to 2 ml of dil. HCl (1:1), filtered and the residue washed with a small volume of HCl (1:1); the total volume of filtrate should be <5 ml and to it is added 1 ml of 1% $CuSO_4$ in HCl (1:1), 1 ml of gelatin soln., 2·5 ml of 40% hypophosphite in HCl (1:1) and dil. HCl (1:1) to 10 ml. The soln. is mixed and heated on the steam bath for 10 min., then cooled, and the absorption is measured, with a blue or orange filter. A mixture of the reagents is used for comparison. The influence of Mo and Cu is removed by the use of an orange or yellow filter, and in the presence of V or Ni the measurement is conducted in the green part of the spectrum. For the determination of As in the presence of H_2SiO_3 it is necessary that the content of Fe in the solution amounts to about 30 mg. The most precise results are obtained with a content of As in the ore of 0·02 to 0·5%.

G. BREWER

SHCHERBOV, D.P.

Nomographic chart for the determination of capillary characteristics in polarography. Zav.lab. 21 no.2:247-248 '55.(MLRA 8:6)

1. TSentral'naya laboratoriya Kazgeolupravleniya.
(Polarography) (Capillarity)

KOZLOVSKIY, M.T., doktor khimicheskikh nauk; SHCHERBOV, D.P.

"Nonferrous metal ore analysis." Fainberg. Reviewed by M.T.Kozlovskii, D.P.Shcherbov. Zav.lab. 21 no.2:255-256 '55.(MLRA 8:6)

1. Chlen-korrespondent Akademii nauk KazSSR (for Kozlovskiy).
2. Starshiy khimik Kazakhskogo geologicheskogo upravleniya (for (Metallurgical analysis) (Nonferrous metals) Shcherbov).

SHCHERBOV, D.P.

Chromatic saturation of a color in colorimetry. Zav.lab. 22 no.1: 125 '56. (MLRA 9:5)

1. TSentral'naya laboratoriya Kazakhskogo geologicheskogo upravleniya.

(Color measurement)

SHCHERBOV, D.P.

Nomogram for determining the minimum weight of specimens. Razved. i okh.nedr 22 no.3:48-49 Mr '56. (MIRA 9:7)
(Mineralogy, Determinative)

USSR/Laboratory Equipment - Instruments. Their Theory, Construction and Application. H.

Abs Jour : Referat Zhur - Khimiya, No 6, 1957, 19796

Author : D.P. Shcherbov.
Title : Slide Rule for Computation of Results of Polarographic Determinations.

Orig Pub : Zavod. laboratoriya, 1956, 22, No 6, 741-742

Abstract : A special slide rule (R) is proposed for an accelerated and simplified computation of results of polarographic determinations. R is constructed by combining photographically reproduced scales of "squares" of an ordinary 25 cm logarithmic rule, displaced one with reference to the other at distances corresponding to the shunting ratios on the polarograph PV-1. One of the scales is divided in magnitudes of the polarographic wave: from 5 to 500 mm.
Examples of computation with R are given.

Card 1/1 - 14 -

137-58-6-13922

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 387 (USSR)

AUTHORS: Shcherbov, D.P., Sagalovich, I.I.

TITLE: Anodic Dissolution of Impurities as a Method of Purification of Mercury for Polarographic Measurements (Anodnoye rastvoreniye primesey kak metod ochistki rtuti dlya polyarograficheskikh izmereniy)

PERIODICAL: V sb.: Opyt raboty geologov-razvedchikov Kazakhstana. Alma-Ata, AN KazSSR, 1957, pp 141-143

ABSTRACT: A method for electrolytic purification of Hg by means of anodic dissolution of impurities in it is proposed. 70-80 cc of filtered Hg are covered with 2-N H_2SO_4 and are heated with mechanical agitation up to 60-70°C, after which electrolysis (anodic dissolution of impurit es) is begun at 0.25-0.50 amp/cm^2 with a Pt-cathode and a Pt-anode. During the electrolysis the difference of potentials between the Hg anode and an auxiliary Hg-sulfate semielement is controlled. When the difference of potentials falls to zero the electrolysis may be considered completed. The completion of the electrolysis can also be detected without anode-potential control by observing

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Anodic Dissolution of Impurities as a Method of Purification (cont.)

the cloudiness in the solution which occurs owing to the beginning of anodic dissolution of the Hg after the dissolution of all the impurities. After completion of the electrolysis the Hg is washed in water in a separation funnel and is filtered; its surface is then dried with filter paper. The purification process described surpasses in yield the method of vacuum distillation of Hg. Both methods achieve an equal degree of purity of Hg.

N.G.

1. Mercury--Purification 2. Electrolysis--Application

Card 2/2

SHCHERBOV, D.P.; SHEVTSOV, P.L.

Photometric determinations in the nearest infrared region of the spectrum. Izv.AN Kazakh.S.S.R.Ser.khim. no.1:25-31 '57. (MLRA 10:5)

(Spectrum analysis) (Photometry)

SHCHERBOV, D. P.

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Effect of Trilon B [sodium salt of ethylenediaminetetraacetic acid] on polarographic properties of some ions in chloride-ammonia medium. D. P. Shcherbov and L. I. Sagalovich. *Izvest. Akad. Nauk Kazakh. S.S.R., Ser. Khim.* 1957, No. 1, 32-5(in Russian).—Complex formations of Trilon B with ions in a neutral electrolyte composed of NH_4OH, NH_4Cl, Na_2SO_4, and gelatin were studied polarographically (cf. *C.A.* 50, 1420f). It was found that complexes formed by bivalent ions of Fe, Cd, Co, Mn, Ni, Zn and Cr^{3+} with Trilon B in the electrolyte were so stable that their half-wave potentials ($E_{1/2}$) became more neg. than the $E_{1/2}$ of other ions in the soln. The complex of Cu^{++} with Trilon B was more stable than with ammonia; however, this stability was insufficient for the complete masking of the ions, and this masking effect was eliminated in the presence of the sequestrator in the region of potentials up to −0.8 v. The $E_{1/2}$ of Tl^{+} was only slightly affected by Trilon B, indicating the possibility of detg. this ion in the presence of traces of Cu. The Bi^{3+} and Fe^{3+} which were pptd. in NH_4OH, in the presence of Trilon B, remained in soln. Under these conditions the polarographic waves were spread far apart, making the detn. of other elements impossible. A similar wave was formed by Se. The V^{5+}, Te^{4+}, Sb^{3+} did not react with Trilon B. Polarographic behavior of Cr^{3+} in NH_4OH revealed that it underwent reduction without any effect of Trilon B on $E_{1/2}$; however, $E_{1/2}$ Cr^{3+} was 0.4 v. below that of Cr^{++}. It is probable that the rate of solvency of Cr ions or the rate of complex formation with NH_4OH were very small, as a result of which they were partially reduced before becoming "complexed" into more

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464j

32-6-8/54

AUTHOR: SHCHERBOV,D.P., KONOVALOVA,K.M.

TITLE: On the Colorimetric Determination of the Content of Mercury in Mercury- and Copper Diiodide. (O kolorimetricheskom opredelenii rtuti v v i de dvoynogo iodida rtuti i m e d i, Russian)

PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol 23, Nr 6, pp 663-665 (U.S.S.R.)

ABSTRACT: It is shown in this paper that on the occasion of the examination of the colorimetrical method for the determination of the mercury content (according to D.N.FINKELSTEIN and Mme. PYETROPAVLOVSKAYA) results were obtained that were lower than those obtained by titration with rodanide or by the distillation method (according to F.A.FYER'YANCHICH). The copper iodide suspension used on this occasion was not dense enough, and discolored mercury silver diodide and copper were precipitated too rapidly, so that comparison of the colorings of the solutions was rendered difficult. According to the method mentioned the iodide concentrations in the samples ought to have agreed with those in the standard scale, but in reality this was not the case. Two scales were worked out on the basis of the results obtained: A - with 0,2% J with a 2,0 KJ solution, and B - with an addition of 1 ml. 1% - iodine solution, i.e. with a final concentration of 0,36% J. The solutions of scale B were then colorimetrized according to the scale A, and solutions of scale A were

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32-8-51/61

AUTHOR: Shcherbov, D.P.

TITLE: A Device with Nomograms, which is Used for the Evaluation of the Results of Photocolorimetrical Determinations. (Ustroystvo s nomogrammami dlya rascheta resul'tatov fotokolorimetricheskikh opredeleniy.)

PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol. 23, Nr 8, pp. 998-1000 (USSR)

ABSTRACT: The above mentioned device consists of a solid plate made of thick cardboard, ebonite wood, or the like, its size being about 25 x 40 cm. On the left edge of the plate there are two brass screws with nuts upon which a ruler with two holes is placed. The distance between the screws corresponds to the distance between the two holes which are made by means of a puncher such as is used for document covers. A corresponding nomogram table, which is usually dimensioned 18 x 33 and is kept in a filing cover and therefore it has also holes on its left side, is fastened by means of the screws of the above mentioned plate with the help of the ruler, and the nuts are tightened. Further, a plexiglass triangle is used, on which a thin line is drawn parallel to the upper edge. The triangle, which consists of two ruler-like arms, has a sliding frame on his upper arm (longer arm) similar to that of a slide rule, which facilitates exact reading of values. In order to be able to use this device with the greatest possible ad-

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SHCHERBOV, Dmitriy Pavlovich; KLIMOV, Vsevolod Valentinovich; POPLAVSKAYA, I.A., otv.red.; CHASOVIKOVA, Z.I., tekhn.red.

[Photometric titration in the analysis of minerals] Fotometricheskoe titrovanie v analize mineral'nogo syr'ia. Alma-Ata, TSentr.in-t nauchno-tekhn.informatsii, 1958. 15 p. (MIRA 13:9)

(Minerals) (Magnesium--Analysis) (Calcium--Analysis)

AUTHORS: Shcherbov, D.P., Ivankova, A.I. 32-24-6-3/44

TITLE: A Comparative Study of the Photometrical Methods of Determining Gallium (Sravnitel'noye izucheniye fotometricheskikh metodov opredeleniya galliya)

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol 24, Nr 6, pp 667-674 (USSR)

ABSTRACT: For the determination of small quantities of gallium a number of reactions was suggested; M.Z.Yampol'skiy (Ref 24) investigated the influence exercised by the nature of the chromophore upon the sensitivity of the reaction of the functional-analytical groups of some reagents. In the USSR the fluorescence method with orthooxyquinoline is the most frequently used, whereas in other countries the colorimetric and fluorometric determination by means of rhodamine B is the most used. Recently, A.M.Lukin and G.B.Zavarikhina suggested using the gallium reagent which was synthetized at the IRYaA for colorimetric determinations of gallium. In order to ascertain the sensitivity of the methods of determination employed, a table was worked out which shows that less than 0.05γ/ml of gallium can be determined in the colorimetrical determination with purpurine, quinalizarin, and gallium, as well as by fluorometric

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A Comparative Study of the Photometrical Methods of Determining Gallium

32-24-6-3/44

measurement with sulphonaphtolazorezorein, orthooxyquinoline, and rhodamine B. For the purpose of studying reagents in the determination of gallium in mineral raw materials gallium and the rhodamines C (the corresponding USSR products B and 6 zh) were used, the structural formulae of which are given; the older laboratory workers R.M.Kuchina and V.I.Brymtseva assisted in the work of determination. In order to investigate the degree of selectivity of rhodamines with different ions and under different conditions, a special technique was developed and used, which is described together with the various types of UV-tubes used for the same purpose. Determinations carried out with rhodamine C (which are shown in form of schematical drawings) show that only ittrium, copper, antimony, thallium and tellurium exercise a disturbing influence; it is further shown that, according to a paper by H.Onishi and E.B.Sandell (Refs 13,14) the influence exercised by Au, Sb, Fe and thallium^{+3} can be eliminated. Experiments carried out with rhodamine 6 zh showed that selectivity was lower than in the case of rhodamine C, but, at the same time, it was found that, if gallium is first separated from the disturbing

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A Comparative Study of the Photometrical Methods of Determining Gallium

32-24-6-3/44

admixtures, the sensitivity attainable is five times as great and the range of application is from six to seven times as great as in the case of rhodamine C. It is recommended by the IRYaA that gallium be used with a biphtalate buffer at pH = 3. In the present paper an acetate buffer with a pH = 3 is, in addition, used and it was found that gallium reacts with many elements especially in the acetate buffer, and that therefore a previous separation of the major part of the ordinary components of mineral raw materials must take place. A comparison of the reagents investigated showed that rhodamine 6 Zh offers considerable advantages compared to orthooxyquinoline, whereas determinations carried out with gallium are comparatively simple although a particularly careful separation of disturbing admixtures must be carried out. There are 7 figures, 2 tables, and 27 references, 9 of which are Soviet.

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A Comparative Study of the Photometrical Methods of Determining Gallium

32-24-6-3/44

ASSOCIATION: Kazakhskiy institut mineral'nogo syr'ya i Tsentral'naya laboratoriya Yuzhno-Kazakhstanskogo geologicheskogo upravleniya (Kazakh Institute of Mineral Raw Materials and Central Laboratory of the South-Kazakh Geological Board of Administration)

1. Ores--Processing 2. Gallium--Determination 3. Photometry --Performance 4. Colorimetry--Performance 5. Fluorometers--Performance

Card 4/4

SOV/32-24-10-14/70

AUTHOR: Shcherbov, D. P.

TITLE: The Fluorescence Analysis of Inorganic Substances (Fluorestsentnyy analiz neorganicheskikh veshchestv) Survey (Obzor)

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol 24, Nr 10, pp 1205 - 1213 (USSR)

ABSTRACT: For determining small quantities of substances the fluorometric methods have several advantages compared to other analysis methods. In the USSR the luminescence method is used mainly for analyses of organic substances. The fluorescence reactions in the analysis of inorganic substances are used far more rarely. Determination methods of this type were, however, described for the main part of the elements of the periodic system and published in systematic compilation by White (Uayt)(Ref 5). In the present survey fluorescence reactions in solutions are mainly treated. These reactions may be divided into three groups according to the action principle. A table of the properties

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of 73 qualitative and quantitative fluorescence determinations is given. The influence of several anions on the fluorescence of some metallic complex compounds of morin was investigated by Ye.Bishop (Ref 12). Data of the fluorescence reactions with cochineal, morin, and 8-oxyquinolin are given as well as a table of the reagents for the fluorescence determination of inorganic ions. In order to introduce the fluorescence methods successfully on a mass scale, the production of the fluorometric apparatus must be started, the production of the corresponding reagents must be accelerated, and fluorometry must be popularized. There are 4 figures, 2 tables, and 92 references, 27 of which are Soviet.

5(2)

AUTHORS: Shcherbov, D. P., Ivankova, A. I. SOV/32-24-11-10/37

TITLE: Fluorometric Determination of Tellurium Using Rhodamine C (Fluorometricheskoye opredeleniye tellura s rodaminom C)

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol 24, Nr 11, pp 1346-1349 (USSR)

ABSTRACT: The reagents recommended for fluorescence determinations of tellurium - acridine, α-naphtaflavone, and quinine (Refs 1,2) - are not sufficiently selective, and react with other elements. It was noticed that compounds of Rhodamine C and 6Zh with tellurium which were extracted with benzene from hydrochloric acid glowed intensely after being subjected to ultra-violet rays (Refs 3-5). The complete tellurium extraction was carried out using 3 ml. of a 2:1 benzene-ether mixture and extracting from 5-7% hydrochloric acid. Since Ga, Sb^{3+}, Sn^{2+}, Mo, Sn^{4+}, and Re and other elements cause fluorescence the sample to be determined was decomposed and Se and Te separated by ordinary methods (Refs 6,7). The solution was made to volume, and contained an optimal amount of tellurium (1 to 15γ). Rhodamine C

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Fluorometric Determination of Tellurium Using Rhodamine C

appears to be more suitable for the tellurium determination than Rhodamine 6Zh . The fluorescence was compared against that of the standard solutions. The advantage of the described method is its inherently faster analysis and the fact that it is possible to use smaller samples (0.1-0.5 g). For the ultraviolet radiation a PRK-4 lamp with a quartz condenser and a UFS-3 filter, or a LYuM-1 apparatus (Ref 8) was used (Table). There are 4 tables and 8 references, 6 of which are Soviet.

ASSOCIATION: Kazakhskiy institut mineral'nogo syr'ya (Kazakh Institute for Mineral Raw Materials)

5(2) SOV/32-24-12-5/45

AUTHORS: Ksandopulo, G. I., Shcherbov, D. P.

TITLE: Determination of Strontium in Silicates and Carbonates in the Flame Photometer With Liquid Light Filter (Opredeleniye strontsiya v silikatakh i karbonatakh na plamennom fotometre s zhidkim svetofil'trom)

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol 24, Nr 12, pp 1432-1434 (USSR)

ABSTRACT: A sensitive and selective method for determining strontium in raw mineral materials was developed. The most favorable spectral region for the strontium determination is 640-690 mμ. At 590-630 mμ, nevertheless, lies the calcium spectral region. For this reason a liquid light filter was tried in an attempt to increase the sensitivity for strontium. A 1% aqueous solution of Rhodamine C with a thickness of 1 cm appeared to be the most effective. To separate the radiation from barium and calcium at 470-540 mμ a liquid light filter consisting of a 100% aqueous $Cu(NO_3)_2$ solution (D=5 mm) and a 40% aqueous solution of $CuCl_2$ (D=5 mm) was used. The compensation method

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Determination of Strontium in Silicates and Carbonates in the Flame Photometer With Liquid Light Filter

of D. N. Ivanov (Ref 10) was used in the strontium determination. Since the presence of lithium, potassium, and sodium introduces errors into the determination an analytical procedure was worked out which excludes these elements from the final photometric solution.
There are 1 figure, 2 tables, and 11 references, 2 of which are Soviet.

ASSOCIATION: Tsentral'naya laboratoriya Yuzhno-Kazakhstanskogo geologicheskogo upravleniya (Central Laboratory of the South Kazakhstan Geological Administration)

[illegible]

[illegible]

[illegible]

With [illegible] to [illegible]iciency and selectivity fluorometric determinations are often preferable to colorimetric determinations (Ref 1). The fact that [illegible] fluorometric analyses have as yet been rarely used in the USSR [illegible] inter alia, is due to the lack of suitable measuring instruments, i.e. fluorometers. In this respect, the present situation may be compared with the position of colorimetry some [illegible] or 25 years ago. Since it is absolutely necessary to embark on the serial production of such fluorometers, the article [illegible] the conditions which the apparatus must meet. A mercury vapor lamp with a linear spectrum of between 254 and [illegible] mμ, or a xenon arc lamp (Ref 3), is to be used as light source. In order to separate the spectrum ranges the apparatus must have a

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series of light filters. Photocell amplifiers and photoelectric cells must be delicate enough to make measurements possible such as that of the luminescence of an alkaline fluorescein solution in concentrations between 10^{-3} and 10^{-6}% irradiated by a PRK-2 lamp with a UFS-3 glass. Furthermore, the vessels should be of a capacity of 1-2 ml, 3-5 ml, and above. Moreover, it is necessary to use standard luminophores for checking the fluorometer, as is the case with the LYuKS-1 and LYuF-5 apparatuses (Ref 5). There are 5 references, 2 of which are Soviet.

S/032/60/026/02/053/057
B010/B115

29(5)
AUTHOR: Shcherbov D. P.

TITLE: 8th Conference on Molecular Luminescence and Luminescence Analysis

PERIODICAL: Zavodskaya laboratoriya, 1960, Vol 26, Nr 2, p 251 (USSR)

ABSTRACT: The Conference mentioned in the title which was convened by the Nauchnyy sovet po lyuminestsentsii Akademii nauk SSSR (Scientific Council for Luminescence of the Academy of Sciences of the USSR) took place in Minsk in October 90 scientific, educational, and industrial institutions represented by 340 delegates from 26 towns of the USSR attended the Conference. The Conference was divided into two sections: one on molecular luminescence, and the other on luminescence analysis with 112 contributions (more than 30 dealing with analytical problems) being read. In the contribution by K. P. Stolyarov and N. N. Grigor'yev (LGU), the analysis of inorganic ions was treated on the basis of the formation of crystal phosphors. Fluorometric determinations of inorganic ions in solutions were treated in the following contributions: Determination of boron with benzoin (D. P. Shcherbov, R. N. Korzheva, and A. I.

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Ponomarenko - KazIMS), determination of boron with morin (T. V. Gurkina, A. V. Drobachenko - Tsentral'naya laboratoriya YuKGU (Central Laboratory of the YuKGU)), determination of magnesium with "lyumomagnezon" (Ye. A. Bozhevol'nov, G. V. Serebryakova - IREA), determination of aluminum with salicylal-o-aminophenol (Ye. A. Bozhevol'nov, V. M. Yanishevskaya - IREA). Fluorometric measurements formed the subject of the contributions by D. P. Shcherbov and R. N. Korzheva "Increase of the Sensitivity and Reproducibility of Fluorometric Analysis of Solutions" and "Some Methodical Problems of Luminescence Analysis of Aqueous Solutions and Emulsions" by M. M. Yudilevich. The necessity of closer cooperation in the investigation of luminescence and its application as well as of the production of corresponding test devices is pointed out in the resolution adopted by the Conference.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548910017-5"

ZOLOTAVIN, V.L., prof.; RESHETNIKOVA, Ye.A.; PILIPENKO, A.T.(Kiyev); SHCHERBOV, D.P. (Alma-Ata); POPOV, M.A.; NAZARCHUK, T.N.

Supplying laboratories with chemical reagents. Zav.lab. 26 no.8:1034-1036 '60. (MIRA 13:10)

1. Ural'skiy politekhnicheskiy institut, Sverdlovsk (for Reshetnikova). 2. Rukovoditel' metodicheskoy gruppy TSentral'noy laboratorii Novosibirskogo geologicheskogo upravleniya (for Popov). 3. Zaveduyushchiy laboratoriyey khimicheskogo i fazovogo analiza Instituta metallokeramiki i spetsial'nykh splavov AN USSR (for Nazarchuk).
(Chemical laboratories) (Chemical tests and reagents)

S/032/60/026/009/013/018
B015/B058

AUTHORS: Shcherbov, D. P., Ponomarenko, A. I.

TITLE: Simplified Fluorometer With an ФЭУ-19 (FEU-19) Photomultiplier

PERIODICAL: Zavodskaya laboratoriya, 1960, Vol. 26, No. 9, pp. 1143 - 1145

TEXT: A simplified fluorometer (fluorophotometer) was designed for the objective measurement of the total intensity of the fluorescence excited in a liquid by an arbitrary line of the mercury spectrum. The instrument (Fig. 1) contains an ultraviolet lamp (of the type СВДШ-250 (SVDSh-250), СВД-120А (SVD-120A), or ПРК-4 (PRK-4)) and a special container (Fig. 2) for the liquid to be investigated, the design of which enables one to measure the luminescence of the upper liquid layer (as for the benzene extract of gallium rhodaminate) or that of the lower one (as for the chloroform extract of the indium oxinate). The photocurrent is measured with an М-194 (M-194) microammeter, the measuring range of which is mentioned in Table 1. A colored salt solution in the

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Simplified Fluorometer With an ФЭУ-19 (FEU-19) Photomultiplier

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B015/B058

cuvette of the ФЭК-М (FEK-M) photocolorimeter serves as secondary light filter, while an ultraviolet glass and a cuvette with a 1 mm thick layer of a 20% potassium chromate solution is used as primary light filter. Apart from the photomultiplier mentioned in the title, one of the type ФЭУ-29 (FEU-29) can also be used. The photomultiplier is fed by a unit with 15 batteries of the type 70/АМЦГ-5 (70/AMTsG-5) or БАС-80 (BAS-80). For a quantitative determination of any substance, a series of calibrating solutions is previously fluorometered. Measuring values of the fluorescence of acidulated aqueous solutions of rhodamine C are given in Table 2. The mean relative error amounts to about 5%. There are 2 figures, 2 tables, and 9 references: 6 Soviet and 3 US.

ASSOCIATION: Kazakhskiy institut mineral'nogo syr'ya (Kazakh Institute of Mineral Raw Materials)

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85388
S/032/60/026/010/025/035
B016/B054

9,5320

AUTHORS: Shcherbov, D. P. and Mirkin, V. A.

TITLE: Liquid Narrow-band Light Filters for the Visible Spectrum Range

PERIODICAL: Zavodskaya laboratoriya, 1960, Vol. 26, No. 10, pp. 1159-1162

TEXT: As the colorimetric measurement by wide-band light filters leads to a distortion of calibration diagrams already at low D-values, the authors use a set of liquid narrow-band light filters. These filters are prepared from inorganic salt solutions which are filled into the cuvettes of a photocolorimeter ФЭК-М (FEK-M). Table 1 shows the composition of the colored stock solutions from which the working solutions are prepared by dilution. To increase the stability, the salts are dissolved in corresponding diluted acids, in NaCl- or ammonia solution. Table 2 indicates 28 liquid light filters. Fig. 2 shows the absorption spectra taken by the spectrophotometer СФ-2М (SF-2M) with the aid of the light-filter set of Table 2. Table 3 shows the characteristics of all light filters on the

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Liquid Narrow-band Light Filters for the Visible Spectrum Range.

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B016/B054

basis of spectral curves. Hence it appears that the maxima of transmissivity of neighboring light filters are about 10 mμ distant from each other. The light filters described here increase considerably the sensitivity of colorimetric measurement, and enlarge the rectilinear range of the calibration curves for many colorimetric determinations. Finally, the authors mention substances for whose photocolorimetric determination the following light filters can be used: № -41 (Zh-41)^{28} (copper ammonia sulfate + cobalt sulfate), № -42 (Zh-42)^{28} ($CuCl_2$, NaCl + $[Cu(NH_3)_4]SO_4$), № -45 (Zh-45)^{28} (as Zh-42, but with a different ratio of components), № -52 (Zh-52)^{28} (K_2Cr_7+$[Cu(NH_3)_4]SO_4$), and № -53 (Zh-53)^{28} (as Zh-52, but with a different ratio of components). There are 2 figures, 3 tables, and 2 Soviet references.

ASSOCIATION: Kazakhskiy institut mineral'nogo syr'ya
(Kazakh Institute of Mineral Raw Materials)

Card 2/2

PHASE I BOOK EXPLOITATION SOV/4973

Soveshchaniye po lyuminestsentsii, 8th, 1959

Metody lyuminestsentnogo analiza; materialy soveshchaniya (Methods for Luminescence Analysis; Materials of the 8th Conference) Minsk, Izd-vo AN BSSR, 1960. 147 p. 1,000 copies printed.

Sponsoring Agency: Akademiya nauk Belorusskoy SSR. Institut fiziki.

General Ed.: B. A. Borisevich; Ed.: L. Timofeyev; Tech. Ed.: N. Siderko.

PURPOSE: This collection of articles is intended for chemists and physicists interested in molecular luminescence, and for scientific personnel concerned with applications of this and related phenomena in research in the life sciences.

COVERAGE: The collection contains 28 papers read at the Eighth Conference on Luminescence, which took place 19-24 October, 1959 [place of conference not given]. These studies are concerned principally with the development of new luminescence methods for quantitative and qualitative chemical analysis, and with the applications of luminescence in medical and biological research. They discuss luminescence methods for the determination of uranium, mercury, magnesium, aluminum, boron, and other elements, as well as luminescence methods for the diagnosis of skin cancer and the detection of grippe virus, pathogenic microorganisms, etc. The structural design of new instruments for luminescence analysis is described. The conference was not concerned with studies on the phosphorescence of crystal phosphores. There is a discussion of the contributions of Soviet specialists in molecular luminescence in the course of the year and a half preceding the conference. The articles of V. K. Matveyev (p. 75) and of V. V. Patrikeyev (p. 79) have been annotated because of their importance. No personalities are mentioned. References accompany most of the articles.

Card 4/10

SHCHERBOV, L. P.

Cand Chem Sci - (diss) "Physico-chemical methods in the analysis of mineral raw material." Alma-Ata, 1961. 57 pp; (Kazakhstan State Univ imeni S. M. Kirov, Kazakhstan Mineral Raw Materials Inst); 300 copies; price not given; list of author's works on 43-53; (KL, 5-61 sup, 178)

S/137/62/000/003/173/191
A160/A101

AUTHOR: Shcherbov, D. P.; Sagalovich, I. I.

TITLE: Polarographic determination of bismuth in mineral raw materials

PERIODICAL: Referativnyy zhurnal, no. 3, 1962, 1 - 2, abstract 3K 3 ("Geol. metodika i tekhn. razvedki, labor. raboty" (5), Alma-Ata, 1961, 132 - - 137)

TEXT: Description is given of determining Bi in amounts up to 2 % in ores by precipitating it from acid solutions with MnO_2 and making a polarographic analysis of same on a H_2SO_4 (1 : 4) background. On this background $E_{1/2}$ of Bi amounts only to a few hundredths of a volt in relation to the saturated calomel semi-element. Therefore, use was made of a mercury-sulfate electrode, the potential of which was by 0.4 v more positive than that of the calomel one, and Bi wave was measured within a range of -0.35 to -0.75 v. Elements settling on MnO_2 together with Bi can also be reduced on a Hg-cathode. However, the reduction potentials of Sn and As are considerably more negative than of Bi; Sb produces no polarographic wave when it is oxidized up to a 5-valent state, while W can be removed

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Polarographic determination of bismuth ....

in the course of acidic decomposition of the sample. Difficulty can be produced only by Mo, yet its content in ores is insignificant. An amount of 0.2 - 0.5 g of ore can be decomposed by 10 - 15 ml of a mixture of HNO_3 + HCl (1 : 3), and evaporated until it becomes a wet salt. Then 1 ml of H_2SO_4 is poured-in (1 : 1) and the salt is again subjected to evaporation. Then 15 - 20 ml of H_2SO_4 (1 : 4) is added, the substance is heated until salt-melting point, whereupon the hot solution is neutralized with NH_4OH until white or brown flakes begin to fall out. The latter are dissolved with 1 - 2 drops of H_2SO_4, supplemented with 20 ml of a 5 % $MnSO_4$ solution and 10 ml of an 1 % $KMnO_4$ solution, actively intermixed and filtered after 10 - 15 minutes through a dense filter. The precipitate is then washed 2 - 3 times with hot water. The filtrate is supplemented with 5 ml (each) of the same $MnSO_4$ and KMnO solutions and is filtered again through the same filter. Then the precipitate is washed with hot water and dissolved on an H_2SO_4 (1 : 4) filter adding 2 - 5 drops of a 3 % H_2O_2, decomposed by boiling. Two-three drops of a 1 % gelatin are added, as well as H_2SO_4 (1 : 4) up to 50 ml, and Bi is analyzed by polarographic means. When Bi > 2 %, the results obtained are underestimate,

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Polarographic determination of bismuth S/137/62/000/003/173/191
A160/A101

probably because of incomplete precipitation of large amounts of Bi with MnO_2.
There are 16 references.

N. Gertseva.

[Abstracter's note: Complete translation]

Card 3/3

TITOV, V.I.; SHCHERBOV, D.P.

Scientific conference held on the occasion of the 40th anniversary of the Kazakh S.S.R. Zav. lab. 27 no.3:362 '61. (MIRA 14:3)
(Kazakhstan--Chemistry--Congresses)

S/032/61/027/009/001/019
B117/B101

AUTHORS: Shcherbov, D. P., and Plotnikova, R. N.

TITLE: Fluorometric determination of submicrogram amounts of beryllium in mineral raw materials

PERIODICAL: Zavodskaya laboratoriya, v. 27, no. 9, 1961, 1058-1062

TEXT: Fluorescence spectra of solutions of the beryllium-morin complex were investigated. A spectrometer of the СФ-2М (SF-2M) type was used for the visible range, and one of the СФ-4 (SF-4) type for the ultraviolet range. The spectra of the excitation and emission of fluorescence were investigated on the SF-4 with suitable attachments (ФЭУ-18 (FEU-18) photomultiplier and ПСР1-01 (PSR1-01) recorder). A borate-citrate buffer solution with Trilon B contained 1γ of Be in 10 ml. Measurements showed that the maxima of absorption and excitation of the beryllium complex lay at 430-440 mμ, and the radiation maximum at 525-530 mμ. For this reason, it is more suitable to use radiant flux of longer wavelength, instead of ultraviolet light, for the excitation of fluorescence. For this purpose, several colored glasses, as well as 10- and 40% aqueous potassium chromate solutions with a layer

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Fluorometric determination of ...

thickness of 10 mm were used as combined light filters. The brightness of luminescence of solutions with a BeO content from 0.2 to 1.0 γ was measured on a simplified fluorometer with incandescent lamp (Ref. 17: D. P. Shcherbov, A. I. Ponomarenko. Byulleten' ONTI MGiON SSSR, no. 2 (31) (1961)). Best results were obtained with a secondary light filter from 40% potassium chromate solution and a primary light filter from violet ФС-1 (FS-1) glass combined with yellow ЖС-4 (ZhS-4) or ЖС-11 (ZhS-11) glasses. When using these filters, between 0.05 and 1.0 γ BeO can be determined on a fluorometer with incandescent lamp, in a total volume of 10 ml. A larger amount of morin must be introduced for a higher beryllium content, which, however, reduces the sensitivity because of the "screening" effect of morin. Maximum brightness of the luminescence develops within 5 min, then it decreases slowly. During the first hour it decreases by 5-10%, but remains proportional to the beryllium content. Such a reduction is, therefore, practically of no importance when a calibration scale is used which was prepared simultaneously with the specimen. To clarify the behavior of other elements under equal experimental conditions (solution with Trilon B, ascorbic and citric acid, and borate buffer with pH = 13), they were tested in amounts of 100 γ and 1 mg. In the presence of Trilon B,

besides scandium and yttrium also solutions with zirconium, hafnium, and thorium content were found to show a certain luminescence. Solutions with scandium and yttrium have a luminescence of only 1/200 of the brightness of beryllium solutions. For other elements, it is even weaker, and amounts to from 1/2000 to 1/3000 of the brightness of beryllium solutions. The effect of various ions on the fluorescence of beryllium was investigated. The brightness of the beryllium luminescence was found to be reduced by 10-20% through vanadate, chromate, and copper. A reduction of brightness to 2/3-1/2 is caused by iron, germanium, tin, uranium, and chromium. Fractions of a microgram of beryllium can still be determined in the presence of 5 mg Al, Ca, Mg, Mn, Mo, Cd, Pb, and Zn; of 350 γ iron and 30 γ chromium. In alkaline solutions, a separation of any precipitates produces a more or less strong coprecipitation of beryllium, and thus causes its loss. Results obtained by direct fluorescence determination, spectrum analysis, and colorimetrically with Beryllon II (of the IREA) were compared. For a beryllium content of up to 0.2-0.3%, the results are very close to each other. For the determination of larger beryllium amounts, all three comparable methods will have to be checked additionally. There are 3 figures, 2 tables, and 18 references: 13 Soviet-bloc and 5 non-Soviet-

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bloc. The three references to English-language publications read as follows: M. H. Fletcher, C. E. White, M. S. Sheftel. Ind. Eng. Chem. Anal. Ed. 18, no. 3, 179 (1946); E. B. Sandell, Colorimetric determination of traces of metals p. 309 New York - London (1959); J. M. Riley, U. S. Bur. Mines, Rep. Invest., no. 5282. 9 (1956), Anal. Abstr., 4, no. 12. 3863 (1957).

ASSOCIATION: Kazakhskiy institut mineral'nogo syr'ya (Kazakh Institute of Mineral Raw Materials)

SHCHERBOV, D.P.; PONOMARENKO, A.I.

Device attached to the SF-4 spectrophotometer for recording excitation and fluorescence spectra. Zav.lab. 27 no.9:1156-1158 '61. (MIRA 14:9)

1. Kazakhskiy institut mineral'nogo syr'ya.
(Spectrophotometer)

S/032/62/028/005/009/009
B117/B101

AUTHOR: Shcherbov, D. P.

TITLE: Soviet ultraviolet lighting fixtures (Review)

PERIODICAL: Zavodskaya laboratoriya, v. 28, no. 5, 1962, 617 - 621

TEXT: Some of the ultraviolet lighting fixtures developed by Soviet factories ("Geologorazvedka" and "Krasnogvardeyets" in Leningrad: Leningradskiy zavod torgovogo oborudovaniya (Leningrad Factory for Commercial Equipments); predpriyatiya Leningradskogo sovnarkhoza (Enterprises of the Leningrad sovnarkhoz); Leningradskiy fiziko-mekhanicheskiy tekhnikum (Leningrad Physicomechanical Tekhnikum)) are briefly described. The review covers luminous sources for longwave UV-radiation (ЛЮМ-1 (LYuM-1), ЛА-1 (LA-1), Л-80 (L-80), ОС-60 (OS-60), КП-1Н (KP-1N), ОС-65 (OS-65), УС-1 (US-1), КП-1МЛ (KP-1ML), and "Ul'trasvet"); luminous sources for shortwave UV-radiation (ЛЮМ-2 (LYuM-2), "Polyus", УИ-1 (UI-1), УБ-1 (UB-1), ОЛ-1 (OL-1)), as well as lighting fixtures with exchangeable light filters (УФ-1 (UO-1), УН-1 (UN-1), ОИ-18 (OI-18), ОИ-23 (OI-23)). There are 3 figures and 2 tables.

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SHCHERBOV, D.P.; KAGARLITSKAYA, N.V.

Effect of large amounts of some elements on the fluorometric determination of gallium by rhodamine C. Zav.lab. 28 no.1:30-33 '62. (MIRA 15:2)

1. Kazakhskiy institut mineral'nogo syr'ya.
(Gallium--Analysis)
(Fluorometry)

SHCHERBOV, D.P.

Soviet ultraviolet illuminators; survey. Zav.lab. 28 no.5: 617-621 '62. (MIRA 15:6)

(Ultraviolet rays)

. SHCHERBOV, D.I.; KOLMOGOROVA, V.V.

Fluorimetric determination of microgram amounts of zinc.
Zav.lab. 28 no.6:649-652 '62. (MIRA 15:5)

1. [illegible] mineral nogo syr'ya.
(Zinc--Analysis)
(Fluorimetry)

[illegible], [illegible]; [illegible]ZANOV, [illegible]

Soviet-Czechoslovak Exhibition of Chemical [illegible] and Isotopes in Leningrad. Zav.lab. 28 no.[illegible]-767 '62.
(MIRA 15:5)

(Czechoslovakia—Chemical tests and reagents)
(Czechoslovakia—Radioisotopes)
(Leningrad—Exhibitions)

S/081/62/000/022/009/088
B177/B186

AUTHORS: (3) Kagarlitskaya, N. V., (4) Klimov, V. V., Kagarlitskaya, N. V., Shcherbov, D. P.

TITLE: Infra-red spectrometry of inorganic substances.
(3) The preparation of solid specimens for quantitative determination.
(4) Absorption spectra of some silicate minerals in the 2-15 micron range

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 22, 1962, 115-116, abstract 22D26 (Tr. Kazakhsk. n.-i. in-ta mineral'n. syr'ya, no. 3, 1960, 308-311; 312-317)

TEXT: (3) A study was made of the conditions under which tablets of the substances to be analyzed could be obtained in a mixture with KBr, and which could be used for recording IR absorption spectra of solid substances. It was noted that the following conditions should be observed in order to obtain high-grade tablets: the KBr and the substance to be analyzed should be dry and crushed to a particle size of ≤ 5 μ; before pressing the tablets, the air should be pumped out for 5-7 min, and

pressing should be performed at a pressure of 5-6 t/cm^2. If particle size greatly exceeds 5 μ, the form of the absorption bands is distorted. However, in the method of pressing the tablets the effect of large particles is less apparent than when depositing the substance on to transparent plates of NaCl or KBr. At low pressures, the tablets obtained are opaque and rapidly crack. If they are pressed without a vacuum under low pressure, the tablets crack when the load is released through the expansion of air contained in the powder. If KBr or the substance to be analyzed are used with an excessive moisture content, opaque tablets are produced. (4) IR absorption spectra in the 2-15 μ range (on a single-beam spectrometer) were obtained for the following 32 minerals in the form of pressings with KBr: zircon, thorite, olivine, fayalite, topaz, disthen, andradite, vesuvianite, titanite, axinite, calamine, epidote, orthite, beryl, chrysocolla, tourmaline, diopside, hedenbergite, spodumene, anthophyllite, wollastonite, radusite-asbestos, talc, phlogopite, muscovite, sericite, penninite, nepouite, dickite, orthoclase, microcline, and lazurite. A diagram shows the positions of the absorption bands in the IR absorption spectra of the above minerals. No simple regularity or arrangement of the absorption bands were observed in the spectra of

Infra-red spectrometry of ...

minerals in the same sub-class, nor any substantial differences between the spectra of different sub-classes. Minerals having the same chemical composition, and which do not crystallize in different syngonies, have different spectra. An analytical scheme is proposed for identifying a silicate which is to be determined, from the IR absorption spectra of minerals previously investigated. For this purpose, the schematic spectra of the minerals are arranged, according to a formal feature of the appearance of their spectra, into two groups: those of minerals containing water, and those containing no water. The minerals are arranged within each group in increasing order of the number of absorption bands in their spectrum. If the number of bands is the same, the first spectrum is that of the mineral whose first band has the shortest wavelength. A given mineral is identified by obtaining its IR absorption spectrum (2-15 μ), and by finding the principal absorption bands in it. Should the spectrum contain a large number of bands, it is diagrammatically drawn on tracing paper to the same scale as the diagram of the spectra of the known minerals. The tracing paper is then laid over the diagram of spectra of the known minerals, and by moving it along the diagram, the minerals are found whose absorption bands correspond to the spectrum of the mineral

Infra-red spectrometry of ...

under investigation. The proposed system can be employed both to identify unknown specimens of a single mineral and to discover similar IR absorption spectra for minerals in different sub-classes. For Part 2, see RZhKhim, 1960, no. 18, 72262. [Abstracter's note: Complete translation.]

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SHELLER, V.R.[Schoeller, W.R. deceased]; POUELL,A.R.[Powell,A.R.]; BELOPOL'SKIY, M.P.[translator]; EYKOVA, V.S.[translator]; KNIPOVICH, Yu.N.[translator]; KRASIKOVA, V.M.[translator]; POPOV, N.P.[translator]; STOLYAROVA, I.A.[translator]; YUSOVA, V.A.[translator] ; ZAYKOVSKIY,F.V., retsenzent; SHCHERBOV,D.P., retsenzent; NEMANOVA, G.F., red. izd-va; IVANOVA,A.G., tekhn.red.

[The analysis of minerals and ores of the rarer elements]Analiz mineralov i rud redkikh elementov. Pod obshchei red. IU.N.Knipovich i N.P.Popova. Moskva, Gosgeoltekhizdat, 1962. 447 p. (MIRA 15:12)

(Mineralogy, Determinative) (Metals, Rare and minor)

S/058/63/000/003/033/104
A062/A101

AUTHORS: Klimov, V. V., Kagarlitskaya, N. V., Shcherbov, D. P.

TITLE: Infrared spectromety of inorganic substances. 4. Absorption spectra of some silicate minerals in the range of wavelengths from 2 to 15 microns

PERIODICAL: Referativnyy zhurnal, Fizika, no. 3, 1963, 41, abstract 3D278 ("Tr. Kazakhsk. n.-i. in-ta mineral'n. syr'ya", 1960, no. 3, 312 - 317)

TEXT: Absorption spectra of 32 silicate minerals of various subclasses were obtained in the range of wavelengths 2 - 15 μ and their characteristic frequencies are represented schematically. An analytic method is proposed for identification of silicate minerals on the basis of infrared absorption spectra of their powders. For Part 3 see RZhFiz, 1962, 10B220.

[Abstracter's note: Complete translation]

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SHCHERBOV, D. [illegible] A, E. N.

Determination of beryllium with morin in ores. Zavod. anal. khim.reak. i prepar. no. 4:62-65 '62.

Determination of boron with benzoin in fluorine-containing materials. Ibid.:65-68. (MIRA 17:5)

1. Kazakhskiy institut mineral'nogo syr'ya (KazIMS).

SHCHERBOV, D. P.; IVANKOVA, A. I.; SOLOV'YAN, I. T.; KAGARLITSKAYA, N. V.

Determination of gallium in ores by rhodamine. Metod. anal. khim.reak. i prepar.no. 4:75-79 '62. (MIRA 17:5)

1. Kazakhskiy institut mineral'nogo syr'ya (KazIMS).

IVA[illegible], A. I.; SHCHERBOV, D. P.

Determination of rhenium in mineral raw materials with rhodamine 6G. Metod. anal. khim.reak. i prepa...o. 4:107-110 '62. (MIRA 17:5)

1. Kazakhskiy institut mineral'nogo syr'ya (KazIMS).

SHCHERBOV, D. P.; KOLMOGOROVA, V. V Prinimala uchastiye:
SHEBALINA, V. I.

Determination of zinc in iron minerals with 8-(p-toluenesulfonylamino)-quinoline. Metod. anal. khim.reak. i prepar.no. 4:125-128 '62. (MIRA 17:5)

1. Kazakhskiy institut mineral'nogo syr'ya (KazIMS).

ACCESSION NR: AR4015635 S/0081/63/000/022/0106/0106

SOURCE: RZh. Khimiya, Abs. 22G48

AUTHOR: Shcherbov, D. P.; Mirkin, V. A.

TITLE: Individual spectrophotometric determination of elements of the rare earth group. Part 2. Method for the determination of Pr, Nd, Ho, Er, and Tu without previous knowledge of their overall concentration

CITED SOURCE: Tr. Kazakhsk. n.-i. in-ta mineral'n. sy*r'ya, vy*p. 7, 1962, 194-199

TOPIC TAGS: rare earth, rare earth element, spectrophotometry, rare earth element determination, visible absorption spectrum

TRANSLATION: A method is presented for the determination of Pr, Nd, Ho, Er, and Tu in overall concentrations of 0.2-0.5% by interpretation of the absorption spectra of their ions in the visible part of the spectrum (without prior determination of the total rare earths). 1-2 g of sample are decomposed in a platinum crucible with 10 ml HF and 2 ml H_2SO_4, and evaporated until the H_2SO_4 fumes; 8 ml

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ACCESSION NR: AR4015635

more HF is then added, and the evaporation is repeated. 10 ml H_2SO_4 is added to the residue and evaporated to a wet sediment which is resuspended in 5 ml HCl (1:4). The solution and sediment are kept in a beaker in an ice bath for 3 hours, being mixed every 5-10 min, and then filtered through thick filter paper. The filter is washed with HCl (3 times 1 ml). To the filtrate are added 2 ml of 40% $SnCl_2$ (in 1:1 HCl) and water to 15 ml, after which the absorption spectrum is measured with 50 mm cuvettes. A mixture of 1 ml H_2SO_4 + 12 ml HCl (1:4) + 2 ml 40% $SnCl_2$ is used as a blank. The standard curve is prepared using standard solutions of the rare earths (10 mg R_2O_3/ml), the absorption spectrum being taken in 10, 20, 30, and 50 mm cuvettes. The height of the characteristic absorption peak from a 10 mm layer of solution corresponds to an absolute content of 30 mg of the given rare earth; the height of the same peak from a 20 mm layer corresponds to 60 mg, etc. The spectrophotometric values were similar to the results of chromatographic and X-ray spectroscopic determinations with 1 g of material, one can determine $\geq$ 0.1% Pr, $\geq$ 0.2% Nd, $\geq$ 0.3% Ho, and $\geq$ 0.5% Er and Tu. For Part 1, see RZhkhim, 1962, 18 D 73. V. Mirkin

DATE ACQ: 07Jan64 SUB CODE: CH ENCL: 00

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ACCESSION NR: AR4015636 S/0081/63/000/022/0106/0106

SOURCE: RZh. Khimiya, Abs. 22G49

AUTHOR: Shcherbov, D. P.; Mirkin, V. A.

TITLE: Individual spectrophotometric determinations of element from the rare earth group. Part 3. Absorption spectra of solutions of certain complex ions of the rare earth elements

CITED SOURCE: Tr. Kazakhsk. n.-i. in-ta mineral'n. sy*r'ya, vy*p. 7, 1962, 200-203

TOPIC TAGS: analysis, spectrophotometry, rare earth, rare earth absorption spectrum, rare earth element determination

TRANSLATION: The influence of certain complex-forming agents on the sensitivity and selectivity of determination of the rare earth elements was shown. In the presence of complex III, all maxima on the absorption curves of Pr, Nd, and Tu are shifted into the long-wave region. In the case of Ho and Er, certain peaks are shifted into the short-wave region. In the case of Sm, no noticeable shift occurs. The presence of citrates has no effect on the position of the Pr peak,

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ACCESSION NR: AR4015636

but the Nd peak shifts into the long-wave region and is superposed on the Pr peak. It was concluded that binding of Pr, Nd, Tm, Ho, Er, and Sm in complexes and citrates has practically no effect on the sensitivity of the determination, but noticeably reduces its selectivity. For part 2, see abstract #22G48. Yu. Dedkov

DATE ACQ: 07Jan64 SUB CODE: CH ENCL: 00

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SHCHERBOV, D.P.

Fluorescence analysis of inorganic substances(survey).
Zav.lab. 28 no.10:1158-1172 '62. (MIRA 15:10)
(Chemistry, Analytical) (Fluorescence) (Chemical elements)